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(71) Applicant *(for all designated States except US)*: TECHNOLOGICAL RESOURCES PTY. LIMITED [AU/AU]; A.C.N. 002 1833 557, Level 39, 55 Collins Street, Melbourne, VIC 3001 (AU).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)* : HOLLITT, Michael, John [AU/AU]; 80 Tyne Street, Box Hill North, VIC 3129 (AU). McCLELLAND, Ross, Alexander [AU/AU]; Lot 136 Murrawong Road, Maryknoll, VIC 3812 (AU). TUFFLEY, John, Roger [AU/AU]; 15 Hill Street, Burnside, S.A. 5066 (AU).

(74) Agent: BLAIR, J., G.; Griffith Hack & Co., 3rd Floor, 509 St. Kilda Road, Melbourne, VIC 3004 (AU).

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(54) Title: UPGRADING TITANIFEROUS MATERIALS

(57) Abstract

The application discloses a process for upgrading a titaniferous material by removal of impurities contained in the material especially radionuclides. The process involves heating the titaniferous material to a temperature of less than 1300 °C to form a solid titaniferous phase and a liquid oxide or glassy phase in the presence of a material that promotes the formations of such phases, cooling the product at a rate that maintains the glassy phase in an amorphous state and leaching the solidified material with an acid or an alkali to remove the impurities. Materials that promote the formation of the desired phases include compounds of alkali metals and boron. Examples include borax, caustic soda, soda ash and silica.